Amendments to the Specification:

The following paragraphs of the submitted specification have been amended:
0002, 0007, 0008, 0009, 0010

An additional paragraph, 0012A, has been added between paragraphs 0012 and 0013:

The amended versions are presented below:

SPECIFICATION

<specification><spec.title-block><spec.title></spec.title>
<spec.version>[Electronic Version 1.2.8] </spec.version>
</spec.title-block><specification-block>
<title-of-invention>Fiber Optic Illuminator</title-of-invention>

<background-of-invention>
<heading>Background of Invention </heading>

[0001]<paragraph> 1. Field of the invention </paragraph>

[0002]<paragraph> The invention relates to need to maximize the light-gathering efficiency and redirection of radiation from omni directional light radiators[[.]] <u>for the purpose of illuminating specimens for optical analyses.</u> </paragraph>

[0003]<paragraph> 2. Description of the Prior Art </paragraph>

[0004]<paragraph> A family of illuminators, e.g., hot filaments or arc lamps, result in point-source radiators whose radiation patterns are only impeded by inherent mechanical support elements. In many applications, it is desirable to efficiently capture this radiated energy and redirect it along a desired optical axis. Common practice employs the use of reflective assemblies that effectively gather the rearward radiation and refocus this energy in a manner that enhances the forward radiation pattern. </paragraph>

[0005]<paragraph> A typical application for this technique is in the field of microscope illumination. The resulting forward radiation pattern is shaped by a collector lens system and ultimately is channeled to the specimen being observed. It is a critical necessity to be able to attain the maximum transfer of light energy from the light source to the specimen. </paragraph>

[0006]<paragraph> In a conventional system, the light energy that does not impinge on the reflector or is not on the desired optical axis is wasted to the local environment. The system herein described employs a unique fiber optic bundle that is able to capture a large percentage of this wasted energy and thereby increase the effective amount of light supplied to the specimen. </paragraph>
</background-of-invention><summary-of-invention>
<heading>Summary of Invention </heading>

[0007]<paragraph> It is the object of this invention to provide ~~a fiber optic illuminator.~~ an omni directional light source system that illuminates specimens fo optical analyses. </paragraph>

[0008]<paragraph> It is another object of this invention to provide ~~a fiber optic illuminator that efficiently captures the radiated light energy in all directions of the horizontal plane of an isotropically radiating light source.~~ said illuminator with the ability to efficiently capture and utilize the unused spherical radiations of existing point source radiating systems.</paragraph>

[0009]<paragraph> It is a further object of this invention to provide a simple means to attenuate the intensity of the light ~~received by the bundle of fiber optic fibers.~~ supplied to the specimens without altering its spectral quality. Supplied</paragraph>

[0010]<paragraph> An advantage of the present invention is that the design of the ~~ring-like array of optical fibers~~ light-capturing shroud removes the criticality of the positioning of the light source relative to the light-gathering device that is inherently common to reflective/focussing systems. </paragraph>
</summary-of-invention><brief-description-of-drawings>
<heading>Brief Description of Drawings </heading>

[0011]<paragraph> Figure 1 contains a top and a side view of the fiber optic assembly. </paragraph>

[0012]<paragraph> Figure 2 depicts the vertical movement of the light source relative to the fiber optic assembly. </paragraph>

[00i2A] Figure 3 shows the vertical drive assembly and the optional light-powered energy panel.

</brief-description-of-drawings><detailed-description>
<heading>Detailed Description </heading>

[0013]<paragraph> </paragraph>

[0014]<paragraph> Figure 1 depicts the structure of the light-capturing device. It consists of an array of optical fibers whose input faces are randomly positioned on the inner surface 1 of a thick-walled cylindrical frame 2 . In addition, these fibers are positioned so that their input faces are normal to the vertical axis of the cylinder. The fibers are grouped and formed into a tight circular output bundle 3. </paragraph>

[0015]<paragraph> Figure 2 details an arrangement wherein a point source light radiator 4 is placed inside the cylinder 2 on its vertical axis. The vertical dimension of the cylinder has a nominal height that results in a minimum angle of 60 degrees with a horizontal plane through the light source. (A design tradeoff exists between the amount of increased light from a larger capture area and the manufacturing ease and cost of additional optical fibers.) The radiated light energy impinges on the inner surface of the cylinder and is collected by the optical fibers. Conventional optical cable is subsequently employed to conduct the gathered light to illuminate any object of interest. </paragraph>

[0016]<paragraph> Various vertical positioning mechanisms can be employed to alter the vertical relationship of the cylinder to the light radiator to achieve any desired light attenuation characteristic. </paragraph>